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Knowledge management in the library--Not

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ABSTRACT: Knowledge management is the latest technology rage. It seems a simple concept, at least to librarians. This supposedly new approach involves capturing the knowledge, the wisdom, the added-value experiences of individuals within an organization, making it easy to find again, and in so doing, preserving it as an organizational asset. Knowledge management evangelists stress automated methods for capturing and making accessible the information that the organization has already purchased. In other words, they are focusing upon storing and reusing specialized information that has already been paid for in one way or another. This is what librarians have been talking about for years. Unfortunately, it seem that librarians are missing this boat. Once again, the MIS/IT types seem to be snatching it out from under them. One big problem is that most librarians do not really have much experience pertinent to a knowledge management assignment.

TEXT: Knowledge management" is the latest technology rage, the siren call of the moment. It seems that corporate and information technology bigwigs are falling over themselves to throw enough money at this solution, er, problem.

It seems a simple concept, at least to librarians. This "new" approach involves capturing the knowledge, the wisdom, the added value experiences of individuals within an organization, making it easy to find again, and in so doing, preserving it as an organizational asset. Knowledge management evangelists stress automated methods for capturing and making accessible the information that the organization has already purchased. In other words, they're focusing upon storing and reusing specialized information that's already been paid for in one way or another. Imagine that, what will they think of next?

Isn't that what we librarians have been talking about all these years? Does this mean that, at long last, we're going to get our place in the sun?

WHO'S GETTING THESE ASSIGNMENTS?

Unfortunately, it seems to me that librarians are missing this boat. Once again, the MIS/IT types seem to be snatching it out from under us. Whose journals are printing the big "how to do it" articles? Whose conference booths have the megabucks knowledge management software displays? Which group do you suppose is getting these juicy assignments?

MIS people seem to think that information technology is the total solution for knowledge management. Unfortunately, these are the same people who often don't appear to have a clue about the organization or representation of knowledge--nor do they understand the behavior of information users. But, whose budgets are getting the big boosts for the knowledge management projects? Have you gotten your slice of this budget windfall yet?

I've not yet heard about many corporate library operations and librarians that are getting these plum knowledge management assignments. Of course,

there are a few; the Boeing and Microsoft operations come to mind. There were a number of librarians actively involved in these and other knowledge management projects presenting at recent conferences (Special Libraries Association, ONLINE WORLD, and Internet Librarian). But the numbers were far from showing any real boomlet of professional activity in this area.

Librarians, predictably, are grumbling about this, "Who is better qualified to manage knowledge than librarians?" Although many of us talk big about crowding up to the plum project assignment counter crying, "Me, me, me, me," not many appear to have succeeded.

THE EXPERIENCE GAP

One big problem is that most librarians don't really have much experience pertinent to a knowledge management assignment, or at least don't have the internal reputation for knowing about knowledge management. Yes, we're super at storing and retrieving facts, images, documents, books, and articles. But we lack skills in the requisite self-promotion work, adding the tinsel and trimmings, aggressively capitalizing upon our accomplishments.

We can't simply be satisfied with building solid information systems, SDI alerts, text retrieval systems, and wonderful database information applications. Everyone in our organization needs to be aware and take for granted that knowledge management is indeed the expertise area of professional librarians. Like they used to say back on the farm, "If you're gonna talk Big Dog, you've gotta act Big Dog."

We should be honest about how serious we are about knowledge management. How many state-of-the-art articles have you read about the complexities of knowledge management projects? Are you closely following the library and computer applications literature on knowledge management? Are you building expertise and solid examples showing you really know this area? Can you comfortably do knowledge management shop talk with the management and computer science executives? And the real killer-are you currently using knowledge management software applications in your own operations?

KNOWLEDGE MANAGEMENT APPROACHES IN THE LIBRARY

The first step is to start tracking the knowledge management topic in the literature. Next, implement some small-scale, practical knowledge management approaches in your own library operation. You don't really need a monster development budget to create effective knowledge management approaches.

You're probably already familiar with database products that you can adapt to a knowledge management application. The "Help Desk" software genre currently appears to be the most economical off-the-shelf application of this approach. Help Desk systems are designed to handle transaction tracking and capture problem-solving knowledge for "reference desk centers," which happen to be called technical support operations. Help Desk software offers a ready model for productive library information system applications.

LIBRARIES-THE ORIGINAL KNOWLEDGE MANAGEMENT OPERATION

Knowledge management has long been the business of reference librarians. Given that the library is a community or institutional memory, the reference desk is also the original Help Desk. Our old information tools like the card catalog and the "frequent questions" card file were really (betatest) "knowledge bases." The library now needs to take full advantage

of automation and the WWW network, in this information service area. The knowledge base approach will allow others to tap in to the effort and serendipity wisdom of the skilled reference librarian "tech support staff." The Web's networking power gives us the communication tool to use to directly and cheaply and speedily transmit this shared information to our colleagues and clients.

The computer will leverage the effectiveness of our operations, to deliver information products, and to analyze and track our performance and our customer desires. This is after all the reason for all those library statistics compilations. This kind of drudgework is really the kind of stuff that computers were designed to do.

The development of systems for tapping into "communal wisdom" databases seems to me to be an obvious and exciting possibility for knowledge management in libraries. These are systems that could give access to the information file compiled in the course of answering patron queries. Such systems would open the reference expert's "problem-solved" file record to the greater community. This is only a small extension of current Help Desk systems and vendor knowledge bases. Examples are linked to my Web page (<http://www.osl.state.or.us/ep/km/libkm.html>).

TWO LIBRARY KNOWLEDGE MANAGEMENT APPLICATIONS

I recently decided to check the Web to locate some library knowledge management applications. A bit of searching and queries to the LibRef mailing list led me to two developing library knowledge management projects. Refquest is a reference information knowledge base at Ithaca College Library. The other system is Information Dispatch, a reference transaction dispatching and tracking system in development at the Multnomah County Public Library.

The Ithaca College Refquest (<http://ic007069.ithaca.edu:80/refquest.taf>; or, for background information, <http://www.ithaca.edu/library/mike/ref.html>) is a down-to-earth, economical approach that provides quick and easy staff or public access to a database of library query information. Nearing the end of testing, it's due to go up for public access in early 1999. Ithaca College Librarian and system designer Michael Poulin described the system to me in some detail. It's a small knowledge base running on an obsolete (4-year-old) 100MHz Mac Power PC, using FileMaker Pro database software and the Tango Web development tool. Refquest provides keyword searching of a database of reference questions, answers, and information resources.

SEARCHING REFQUEST

Users enter natural language queries to search in either uncontrolled text or a controlled vocabulary field. At public access startup time, the database will contain approximately 200 questions, most entered from the library's old "frequently asked" question file. The Reference staff is updating and enlarging the information file, based upon their selection of current items of probable future interest, or of just plain "interesting questions."

(Illustration Omitted)

Captioned as: Users enter natural language queries to search in either uncontrolled text or a controlled vocabulary field in Ithaca College's Refquest system.

Along with concise question statements, Refquest records contain short

summary answers and notes. The system takes full advantage of Web hypertext linking ability, since records also contain URL links to pertinent Web sites, and direct links to pertinent bibliographic records in the library's online catalog. The links may optionally contain pointers to materials and resources not owned by the library, such as material in other collections, human experts, information centers, telephone contacts, and other organizations.

Poulin says the total system cost was under \$1000, besides the Macintosh server. This breaks down to approximately \$300 for the Webstar Web server, \$99 for FileMaker, and \$300 for the Tango development tool. Talk about a bargain in knowledge management system capital outlay!

Refquest is a practical and innovative library application of inexpensive mass-market software. I hope that more libraries will make creative and productive applications of database packages like FileMaker, Access, DTSearch, and Isys. Giving our customers inexpensive connections to our "secret" information seems to be an excellent use of technological resources.

INFORMATION DISPATCH

Multnomah County's Information Dispatch system shows a different approach to knowledge management applications. This one concentrates upon transaction-processing efficiencies. Multnomah County Librarian Donna Reed says that the system was based on software known as "ticketing systems." These are transaction tracking systems normally used for operations like auto-repair operations or technical support centers. Reed says that the Multnomah County library searched for library system applications of this type about a year-and-a-half ago, but failed to identify any of interest.

They started from Ground Zero with a process improvement analysis on the manual reference operations within the Central and branch libraries. A much improved workflow model resulted, which took advantage of email, a database engine, and Web communications. The first efficiency was standardizing the use of email to transmit reference queries from the public or branch libraries to the Central Library telephone reference operation, or directly to subject specialists.

Information Dispatch's ticketing system has improved Multnomah County library processing of reference requests and communications. The email modules speed the routing of questions among the library's staff resources. The database engine provides efficient control and direction of question processing. When I used the Web to examine various screens in the Information Dispatch system, a menu system guided me through a variety of query transaction records. I saw the main working queue or list of "currently unanswered questions;" a 30-day list of completed queries (including questions and answer information, along with processing data details); and search functions which allowed librarians or branch libraries to check on status of an unanswered question.

Reed notes that the system provides extensive information and statistical tracking on processing times, types of questions, areas of service (from patron ZIP codes), and routing or handling bottlenecks. The library intends to use Information Dispatch for data mining, to analyze question patterns, resources used, collection development, reference labor planning, and other library management information.

The library contracted with a local systems consultant, who developed the Information Dispatch application on a UNIX workstation platform. He used PERL scripts to integrate the major components of system email, an Apache

Web server, and the Oracle database engine. At writing, Information Dispatch is still running on the consultant's server, but will be moving to a library platform. It's still under development (Reed says it's currently at version 0.9!), and is not yet completely integrated into the library operation. Reed plans a staff focus group and review in January 1999, as part of final system implementation and adoption.

She can't currently allow general professional interest access into the system because it's still on the consultant's processor, and because of patron confidentiality issues. With Reed's permission, however, I have taken screen snaps of representative menus and query records, and put them up at my Web site for professional inspection purposes (<http://www.osl.state.or.us/ep/km/libkm.html>).

CONSIDER THE POSSIBILITIES...

Imagine the possibilities in "knowledge managing" our local informal information files-loading old backfiles of frequently asked question card files for public access; factual database enrichment with links to specific items in online catalogs, as well as to pertinent Web links; entry of records from staff research notes; of information culled from disciplinary departmental files or Web sites; of listings of favored departmental or disciplinary expert resources; area specialist phone listings; of tech. support problem-solving summaries; or archiving valuable informative messages from electronic mailing lists; storing of search queries for online databases.

It's quite possible to combine these two approaches. You could use the computer to provide access into the knowledge base, and at the same time apply automation power for adding efficiencies in transaction processing. For example, you could use it to produce data and statistics for such purposes as transaction reports, bill-back charges for user departments, analysis of target audience or departmental usage, and patron/customer mailings.

Transaction automation certainly pays off handsomely; there should be ample payback for the routine keyboarding of current information transactions. Not to worry: there's no reason for data entry of trivial and no-brainer quick reference transactions. There's cheaper and better ways to access that kind of information. About all needed here is a "ticking off" kind of record of transactions and categories describing the query and service level.

However, the improvements in routing and delivery of queries, the built-in interface to email replies, the automatic entry of information into the knowledge base, the automatic generation of library statistics, all of these will repay the "operator entry" of the queries at first patron contact. There is triviality amongst the gold in the information content, but routine review and selection of items of potential value can quickly filter out that dross.

BLUE-SKY POSSIBILITIES...

Finally, I'm going to take some liberties in mixing current information processing realities with some (imaginary) potential applications of advancing information technology. I don't think these ideas are really very far out; most of the software technology I describe already exists. Please humor me as I blue-sky extrapolate a bit here.

Blue-Sky Knowledge Base System Specs:

Automated creation of formal and informal knowledge bases, using automated analysis and enhancement of records.

Automated analysis of document content to accomplish automatic keyword entry into metatag or keyword enhancement fields.

"Abstracting software," using algorithms for extraction of representative content sentences or paragraphs of high descriptive value.

Default relevance ranking of retrieved items, with added weight given to assigned topics and keywords.

Natural language search interfaces, including systeminitiated user interaction for addition of synonyms, concept queries, or controlled vocabulary terms. System prompting for shades of meaning and interpretations.

Application of voice processing retrieval interface for querying knowledge bases.

Library science can gain a lot from applying knowledge management methods and technology. What profession is better suited to develop these information system integration possibilities? Library professionals already have expertise in mediating end-user interfaces to information systems. They already know how to effectively "mix & match" information formats and resources. What IT personnel can do such things?

I don't think it's unreasonable to expect these implementations to start very soon. After all, we're shortly going to see toy vendors coming out with products like the alreadyannounced "Amy" doll. This creaturelet will come complete with a 10,000 phrase vocabulary and interactive abilities. Imagine, a robot kiddie companion!

What kinds of information user expectations do you suppose these kids are going to have when they grow up? Let's start getting ready for these patrons by producing knowledge management success stories in libraries.

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